RMT

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February 17, 2011

Mr. Jacob Hassan
Environmental Scientist
U.S. EPA Region 5 (LM-8J)
77 West Jackson Blvd.

Chicago, IL 60604

Subject: Mallard North Landfill
Response to Comments on the Groundwater Evaluation Report

Dear Mr. Hassan:

RMT, Inc. (RMT), on behalf of the Forest Preserve District of DuPage County (District) is submitting this letter, which contains responses to United States Environmental Protection Agency (U.S. EPA) and Illinois Environmental Protection Agency (IEPA) comments on the Mallard North Landfill (MNL) Groundwater Evaluation Report (Report), dated September 2010. The comments were attached to an e-mail from the U.S. EPA to the District, dated January 13, 2011. These comments were discussed at the February 10, 2011 meeting between the District, U.S. EPA, IEPA, County of DuPage and RMT. Each comment followed by a response is presented below.

General Comments and Responses

Comment 1

Present and discuss the issue of contaminants from MNL impacting up-gradient groundwater monitoring wells at the adjacent Mallard Lake Landfill. (Section 3)

Response 1

Based on our discussion during the February 10, 2011 meeting, we understand this comment relates to monitoring well G151. Well G151, originally designated as G120D, was installed to monitor MNL. In 1999 the well was incorporated into the groundwater monitoring program for Mallard Lake Landfill (MLL). Well G151/G120D was not monitored as part of the first baseline groundwater monitoring event because of concerns over well integrity. A replacement well (G120DR) was constructed adjacent to well G151/G120D for the purpose of MNL baseline groundwater monitoring. The sampling results for well G120DR are contained in the Report. In summary, there was only one exceedence (total lead) of a Part 620 groundwater quality standard at monitoring well G120DR. The

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results of the remaining baseline sampling events for well G120DR (along with all other wells sampled) will be evaluated to assess possible impact to groundwater quality.

Regarding the issue of well G151D, this well is the subject of an Application for Significant Permit Modification submitted by AECOM on behalf of BFI Waste Systems of North America LLC. A copy of this document was transmitted by the District to the U.S. EPA and IEPA via e-mail on February 10, 2011. In summary, AECOM/BFI has performed investigative work that indicates the integrity of well G151D has been compromised. For further details please refer to the application, which we understand is currently under review by IEPA.

Comment 2

Natural attenuation of groundwater contamination should only be considered an option if the contamination source has been removed or controlled.

Response 2

Based on our discussion during the February 10, 2011 meeting, we understand that this comment was provided to inform the District of IEPA policy. Although it is not feasible to remove the landfill, there are options for controlling the source. In fact, the most common control actions associated with landfills have already been implemented at the site. In the past two years, a leachate recovery system and a landfill gas control system have been installed and are currently operating. In addition, the landfill cap was upgraded to enhance the cover thickness and improve surface water drainage.

Comment 3

A groundwater monitoring zone can't be established without conducting corrective action.

Response 3

Please refer to our response to Comment 2. In addition, RMT is aware of other older closed landfills in Illinois that have implemented corrective actions similar to those implemented at MNL and that have also established groundwater management zones.

Comment 4

The groundwater contamination caused by the landfill should be (at a minimum) controlled and contained within the District's property boundary.

Response 4

The process of defining the extent of groundwater contamination is underway; one of the four baseline groundwater monitoring events has been completed. The relationship between the extent of groundwater contamination and the District's property boundary will be evaluated as part of the

baseline groundwater monitoring. The property boundary was discussed during the February 10, 2001 meeting and maps showing the property boundary were transmitted by the District to U.S. EPA and IEPA via e-mails dated February 10 and 11, 2011. Updated copies of the maps were transmitted to U.S. EPA and IEPA via e-mail on February 15, 2011 (see Attachment A).

Comment 5

At various points in the report, conclusive statements are made about contaminant migration in soil and groundwater. ALL such statements should be removed from the report until additional groundwater and gas probe sampling is conducted which confirms current sampling and existing conditions. See specific examples below.

Response 5

As discussed during the February 11, 2011 meeting, the District will consider this comment when preparing future reports. At the meeting it was agreed that the Report would not need to be revised.

Comment 6

The Team needs to discuss whether or not the USDOI recommendations for dissolved methane are appropriate concentrations for 'triggering an alert' and 'immediate action' at MNL. (Section 4).

Response 6

This issue was also discussed during the February 10, 2011 meeting and it was agreed that the District would propose to U.S. EPA and IEPA a process by which dissolved methane in groundwater could be evaluated to assess the need for additional corrective action (trigger/response). The District will be considering this issue as more baseline groundwater quality data are collected.

Specific Comments and Responses

Comment 1

It is noted that the shallow groundwater flow from the MNL area to the Green Brook Elementary school area converges on a water table low point near the West Branch of the DuPage River. This should be confirmed as a normal state and that this low point is not just a seasonal occurrence. (Section 1, page 3, paragraph 2)

Response 1

Depth to groundwater measurements will be obtained during the next three baseline groundwater monitoring events at MNL monitoring points and monitoring points located in the vicinity of Greenbrook School. Data from these monitoring events will be used to assess groundwater flow direction over the next three quarters.

Comment 2

The location, design and construction of MNL present various factors that need to be considered when evaluating the groundwater data. Leachate collection areas throughout the landfill were installed to lower the levels and prevent outbreaks identified by USEPA and RMT. Landfills designed to meet 258 standards collect leachate and provide an adequate representation of the constituents generated by the waste. This landfill does not have those design features which makes it difficult to identify all the constituents being generated by the waste. Additional leachate sampling (other than the three extraction locations sampled) should be considered to provide a more solid, representative baseline as to leachate quality from the landfill. (Section 2.4, page 20)

Response 2

This issue was also discussed during the February 10, 2010 meeting. We understand that reviewers of the Report understood that the purpose of the leachate quality discussion was to provide the basis to reduce the list of analytes for future groundwater monitoring. This was not the intent of the Report discussion, but rather to provide a comparison of the groundwater contaminants to the leachate contaminants. During the meeting it was agreed that the next baseline groundwater monitoring round would include the same wells and analytes as the first round (with considerations noted in the response to comment 9). Based on this agreement, the District understands it will not be necessary to collect additional leachate samples (other than the three extraction locations already being sampled).

Comment 3

Include field data (e.g. dissolved oxygen, pH, redox, conductivity, temperature and turbidity) in all future groundwater evaluation reports. (Section 3)

Response 3

Field data was included in Appendix E of the Report and will be included in subsequent reports.

Comment 4

Remove statements about organic or inorganic parameters "are not a significant concern in groundwater at MNL." (Section 1.6/paragraph 3/page 4, bullets on page 5 & 6, Section 3.3.1/page 25, Section 3.3.2/page 26 & 27, Section 3.3.3/page 28, Section 3.4/page 29)

Response 4

Please refer to the response to general comment 5.

Comment 5

The initial ground water characterization shows that the water table mirrors the topography and slopes toward the West Branch DuPage River along each bank. This appears to isolate the Greenbrook School from ground water flow migrating from the landfill. Also, elevated dissolved methane concentrations have been detected along the southeastern margin of the facility. A potentiometric study should be conducted in this area during high-water conditions at the river, to determine if ground water from the facility could flow toward the school when an elevated river surface could "flatten" the gradient. (Section 4)

Response 5

Please refer to the response to specific comment 1.

Comment 6

Remove conclusive statement(s) that methane will not migrate toward the Greenbrook Elementary School (Section 4, page 34, paragraph 1) as well as statements that migration of gaseous methane in the W1/W2 is not possible (Section 4, page 38, paragraph 2) until additional sampling confirms gradients, season water table fluctuations, and assumptions on existing conditions in Section 2.

Response 6

Please refer to the response to general comment 5.

Comment 7

Ongoing groundwater monitoring should be conducted to measure the performance of the methane abatement/flare system which may reduce methane in the groundwater. (Section 4)

Response 7

Dissolved methane in groundwater will be analyzed during the next three baseline groundwater monitoring events. At the conclusion of the baseline groundwater monitoring a longer-term groundwater monitoring program will be established.

Comment 8

Remove statements that "methane in groundwater at MNL is not a significant concern" (Section 1.7/page 6, Section 4.5/page 44).

Response 8

Please refer to the response to general comment 5.

Comment 9

Several of the agreed upon monitoring locations in the first round of sampling had detectable level of contaminants. Of these detections, many have exceedences above the Class I and II ground water standards. Additional full rounds of groundwater monitoring are needed to confirm these detections. (Section 5)

Response 9

The next round of baseline groundwater monitoring will include the monitoring locations and analytes that were part of the first baseline groundwater monitoring event. The revised baseline groundwater monitoring program proposed in the Report eliminated those monitoring locations that did not have Class I or Class II groundwater standard exceedence (or only had one or two exceedences). It also eliminated those monitoring locations where the post-purging recovery was very slow (making it time consuming to collect sufficient sample volume). The first baseline sampling round took nearly three weeks to complete because of this slow recovery issue. During the February 10, 2011 meeting U.S. EPA indicated that the District should attempt to collect samples from all monitoring points; however, the District understands that U.S. EPA recognizes that if recovery at certain locations is extremely slow, not all analytes may be analyzed. The District proposes the following priority order for analytes at slow recovering wells:

1. Methane
2. VOCs
3. Metals
4. SVOCs
5. Inorganic indicator parameters
6. PAHs

Following the next baseline sampling round, the data will be compiled and evaluated and a report will be submitted to U.S. EPA and IEPA. The report will include a brief discussion of the sampling procedures/results and will present a proposed program for the final two baseline groundwater monitoring events. The report will also include tables which present the data, compare data to Part 620 standards, compare second round data to first round data, etc. Maps showing groundwater flow direction will also be included. Data will be appended to the report.

Comment 10

Given the results of the first round sampling, it appears that long-term ground water monitoring will be appropriate for MNL. The exact long-term monitoring plan is best determined following the completion of the initial four quarters of sampling. (Section 5, page 45, paragraph 3)

Response 10

Following the four rounds of baseline sampling, the data will be compiled and evaluated and a report will be submitted to U.S. EPA and IEPA. The report will include a discussion of the sampling procedures/results and also present a discussion of the need for a longer-term monitoring plan. The report will also include tables which present the data, compare data to Part 620 standards, compare the four rounds of data, etc. Maps showing groundwater flow direction will also be included. Data will be appended to the report.

Comment 11

It is stated that the long term monitoring plan (after the four rounds of baseline sampling) is to monitor VOC's and SVOC's on a semiannual basis. Given that there is only one round of sampling results available, the baseline sampling should be completed prior to making this assessment. (Section 5, page 46, paragraph 2)

Response11

As indicated in our response to comments 9 and 10, the data from the four rounds of baseline sampling will be evaluated to determine the appropriate scope of a longer-term monitoring program.

Comment 12

For the proposed inorganic groundwater sample parameters listed in Table 10, conduct total and dissolved analysis for the 3 remaining baseline groundwater monitoring (quarterly) events. (Section 5)

Response 12

As indicated in our response to comment 9, the data from the second round of baseline groundwater monitoring, which will include both total and dissolved inorganics, will be compiled and evaluated and a report will be submitted to U.S. EPA and IEPA. The report will include a brief discussion of the sampling procedures/results and will present a proposed program for the final two baseline groundwater monitoring events. The report will include a discussion of the need for both dissolved and total inorganic.

Conclusion

We believe the responses presented above are consistent with the discussion during the February 10, 2011 meeting and adequately address U.S. EPA and IEPA comments on the Report. If you have any questions, please contact me at al.schmidt@rmtinc.com or 847-867-9635.

Sincerely,

RMT, Inc.

Jason Schoephoester
Environmental Scientist

Alan J. Schmidt
Project Manager

cc: Joe Benedict, Forest Preserve District of DuPage County
Tom Rivera, Illinois Environmental Protection Agency
Joy Hinz, DuPage County

Attachment A

Mallard Lake Preserve
(2008 Aerial)

0 475 950 1,900 2,850 3,800

Feet

Legend

FPD Boundaries

Office of Environmental Services
January 19, 2011
By Joseph R. Benedict

FOREST PRESERVE DISTRICT
DU PAGE
COUNTY

N
W E
S

Mallard Lake Landfills
Various Boundaries

Legend

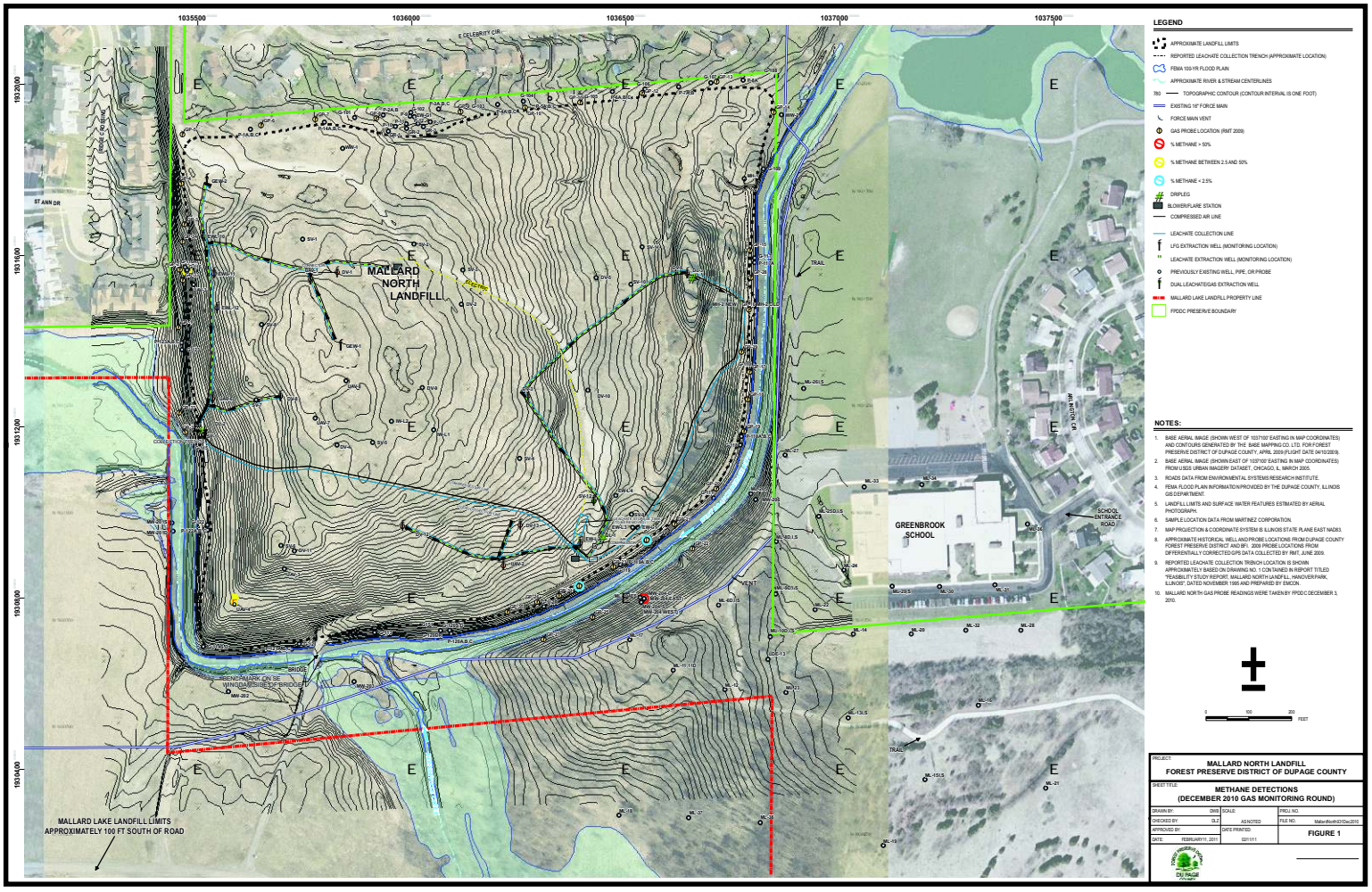
- FPD Boundaries
- Parcel Data
- Landfill Permit Boundary
- 2008 Aerial

0 140 280 560 840 1,120
Feet

Office of Environmental Services
February 15, 2011
By Joseph R. Benedict

FOREST PRESERVE DISTRICT
DU PAGE COUNTY

N
W E
S



LEGEND

- APPROXIMATE LANDFILL LIMITS
- REPORTED LEACHATE COLLECTION TRENCH (APPROXIMATE LOCATION)
- FEMA 100-YR FLOOD PLAIN
- APPROXIMATE RIVER & STREAM CENTERLINES
- 780 TOPOGRAPHIC CONTOUR (CONTOUR INTERVAL IS ONE FOOT)
- EXISTING 16" FORCE MAIN
- FORCE MAIN VENT
- GAS PROBE LOCATION (RMT 2009)
- % METHANE > 50%
- % METHANE BETWEEN 2.5 AND 50%
- % METHANE < 2.5%
- DRIPLEG
- BLOWER/FLARE STATION
- COMPRESSED AIR LINE
- LEACHATE COLLECTION LINE
- LFG EXTRACTION WELL (MONITORING LOCATION)
- LEACHATE EXTRACTION WELL (MONITORING LOCATION)
- PREVIOUSLY EXISTING WELL, PIPE, OR PROBE
- DUAL LEACHATE/GAS EXTRACTION WELL
- MALLARD LAKE LANDFILL PROPERTY LINE
- FPDDC PRESERVE BOUNDARY

NOTES:

1. BASE AERIAL IMAGE (SHOWN WEST OF 1037100' EASTING IN MAP COORDINATES) AND CONTOURS GENERATED BY THE BASE MAPPING CO. LTD. FOR FOREST PRESERVE DISTRICT OF DUPAGE COUNTY. APRIL 2009 (FLIGHT DATE 04/10/2009).
2. BASE AERIAL IMAGE (SHOWN EAST OF 1037100' EASTING IN MAP COORDINATES) FROM USGS URBAN IMAGERY DATASET, CHICAGO, IL. MARCH 2005.
3. ROADS DATA FROM ENVIRONMENTAL SYSTEMS RESEARCH INSTITUTE.
4. FEMA FLOOD PLAIN INFORMATION APPROVED BY THE DUPAGE COUNTY, ILLINOIS GIS DEPARTMENT.
5. LANDFILL LIMITS AND SURFACE WATER FEATURES ESTIMATED BY AERIAL PHOTOGRAPH.
6. SAMPLE LOCATION DATA FROM MARTINEZ CORPORATION.
7. MAP PROJECTION & COORDINATE SYSTEM IS ILLINOIS STATE PLANE EAST NAD83.
8. APPROXIMATE HISTORICAL WELL AND PROBE LOCATIONS FROM DUPAGE COUNTY FOREST PRESERVE DISTRICT AND BFI. 2009 PROBE LOCATIONS FROM DIFFERENTIALLY CORRECTED GPS DATA COLLECTED BY RMT, JUNE 2009.
9. REPORTED LEACHATE COLLECTION TRENCH LOCATION IS SHOWN APPROXIMATELY BASED ON DRAWING NO. 1 CONTAINED IN REPORT TITLED "FEASIBILITY STUDY REPORT, MALLARD NORTH LANDFILL, HANOVER PARK, ILLINOIS", DATED NOVEMBER, 1995 AND PREPARED BY EMCON.
10. MALLARD NORTH GAS PROBE READINGS WERE TAKEN BY FPDDC DECEMBER 3, 2010.

0 100 200 FEET

PROJECT:	MALLARD NORTH LANDFILL FOREST PRESERVE DISTRICT OF DUPAGE COUNTY
SHEET TITLE:	METHANE DETECTIONS (DECEMBER 2010 GAS MONITORING ROUND)
DRAWN BY: DMH	SCALE:
CHECKED BY: GLZ	AS NOTED
APPROVED BY:	DATE PRINTED:
DATE: FEBRUARY 11, 2011	02/11/11
PROJ. NO.	
FILE NO.	Mallard\north\31Dec2010
	FIGURE 1

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